

(No Model.)

T. FLETCHER.

GAS STOVE.

No. 316,027.

Patented Apr. 21, 1885.

Fig. 1.

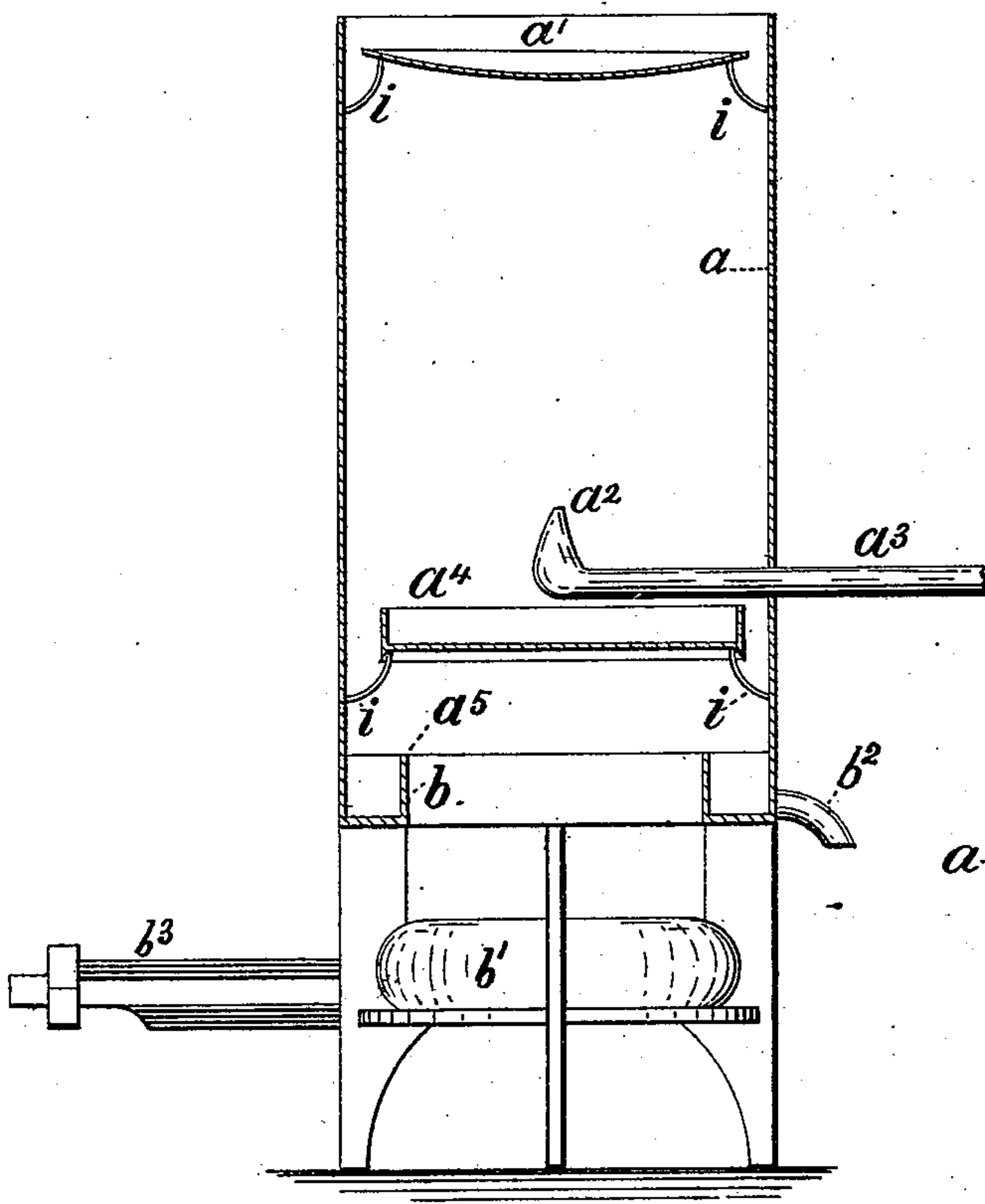
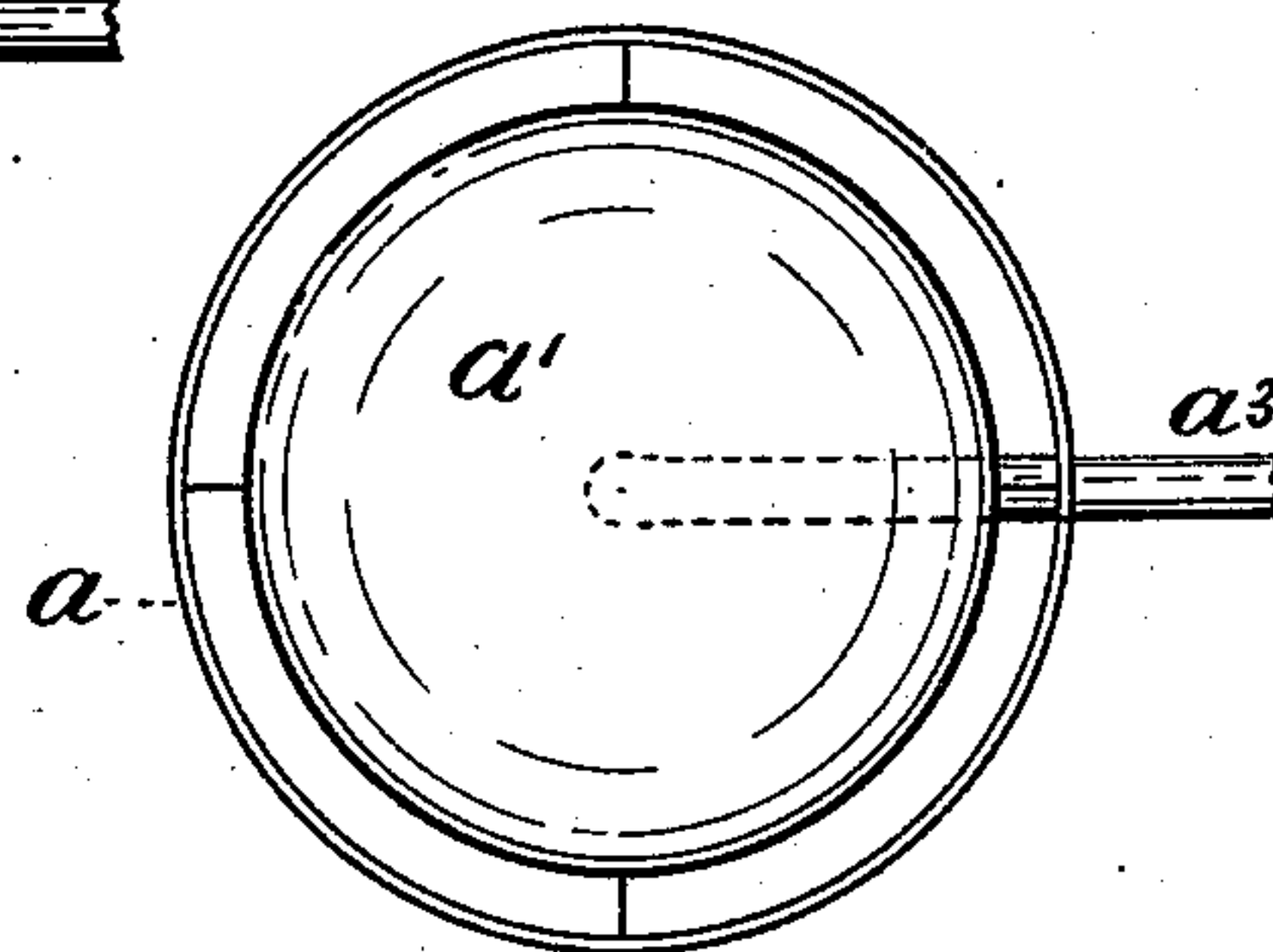


Fig. 2.



Witnesses.

Jennie M. Caldwell.  
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Inventor.

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Att'y.

# UNITED STATES PATENT OFFICE.

THOMAS FLETCHER, OF WARRINGTON, COUNTY OF LANCASTER, ENGLAND.

## GAS-STOVE.

SPECIFICATION forming part of Letters Patent No. 316,027, dated April 21, 1885.

Application filed March 6, 1884. (No model.) Patented in England January 5, 1884, No. 809.

*To all whom it may concern:*

Be it known that I, THOMAS FLETCHER, a subject of the Queen of Great Britain, residing at Warrington, in the county of Lancaster and Kingdom of Great Britain, have invented certain new and useful Improvements in Gas-Stoves; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to certain improvements in gas-stoves, all of which will be fully and clearly shown and described by reference to the accompanying drawings, in which—

Figure 1 is a sectional elevation of the apparatus, showing a section through the outer casing, and also through the dash-plate, shallow circular water-tray, an annular water space or vessel, and a side elevation of a portion of the water-jet tube and nozzle. Fig. 2 represents a plan or top view of the casing dash-plate and a portion of the water-jet tube, the burner not being shown.

These improvements relate to the construction of an apparatus for heating water by bringing it into actual contact with the heated products of the combustion of gas; and they consist in the combination of a water jet or jets, a shallow circular tray, and an annular water-space contained within a suitable casing, in the bottom of which an opening is formed for the admission of the heated products of combustion from the gas-burner placed below the apparatus. With the water jet or jets, circular tray, and casing there may also be combined a dash-plate, as hereinafter described.

In carrying out these improvements I construct a casing of cylindrical or other convenient form,  $a$ , of metal or other suitable material.

When the use of a dash-plate  $a'$  is advisable—as, for example, when a jet-tube with a single central orifice is employed—I suspend or attach it immediately below the top of the

casing. The dash-plate is by preference circular plan dished, as shown, and fixed with its convex surface downward. The water-jet tube  $a^2$  is placed approximately central or concentric within the casing, and is connected to the water-supply by means of a suitable tube or pipe,  $a^3$ . Below the jet-tube I fix a shallow tray,  $a^4$ , and below the tray I form in the bottom of the casing an annular water-space,  $a^5$ , surrounding an opening,  $b$ , for the passage into the apparatus of the products of combustion. The opening must be of smaller diameter than the tray above it, so that no water may fall through the opening and upon the burner  $b'$  when the apparatus is at work. The annular water-space is provided with an outlet for the delivery of the heated water collected therein, the water being conducted by a spout,  $b^2$ , or other well-known means.

The action of the apparatus may be described as follows: The gas in the burner below the apparatus being lighted and the water turned on, the jets of water, striking each other or the dash-plates, are diffused throughout the interior of the casing as spray, which, falling slowly, is collected partly in the annular space and partly in the tray, from which it overflows into the annular space, from which it passes off through the outlet  $b^2$ .

The only portions of the apparatus exposed to the possible action of the flame or heated gases, being covered in the inner side with water, are always maintained at a lower temperature than that of boiling water, and are thus protected from corrosion, local action, or injury from the heat.

I claim as my invention—

In an apparatus for heating water by means of gas, a casing,  $a$ , dash-plate,  $a'$ , shallow tray  $a^4$ , an annular water-vessel  $a^5$ , surrounding the opening  $b$ , and a jet-tube,  $a^2$ , in combination with a suitable gas-burner, substantially as and for the purposes described.

In testimony whereof I affix my signature in presence of two witnesses.

THOS. FLETCHER.

Witnesses:

SAML. ECROYD,  
WM. E. HEYS.